RAW SEQUENCE LISTING

The Biotechnology Systems Branch of the Scientific and Technical Information Center (STIC) no errors detected.

Application Serial Number: _10/532,197_

Source: _PCT_

Date Processed by STIC: _2/9/06_

ENTERED

CRF Errors Edited by the STIC Systems Branch

Serial Number: _10/532,197_   CRF Edit Date: _2/9/06_
                                  Edited by: _m_

____ Realigned nucleic acid/amino acid numbers/text in cases where the sequence text "wrapped" to the next line

____ Corrected the SEQ ID NO. Sequence numbers edited were:

_____

____ Inserted or corrected a nucleic number at the end of a nucleic line. SEQ ID NO's edited:

_____

____ Deleted: ____ invalid beginning/end-of-file text ; ____ page numbers

____ Inserted mandatory headings/numeric identifiers, specifically:

_____

____ Moved responses to same line as heading/numeric identifier, specifically:

_____

____ Other: _Sequence list corrected amino acid numbering_

_____

```
        RAW SEQUENCE LISTING                    DATE: 02/09/2006
        PATENT APPLICATION:  US/10/532,197      TIME: 18:29:57

            Input Set : A:\PTO.AMC.txt
            Output Set: N:\CRF4\02092006\J532197.raw

    4 <110> APPLICANT: Biogen Idec MA Inc.
    5        Prentice, Holly
    7 <120> TITLE OF INVENTION: HIGH EXPRESSION LOCUS VECTOR BASED ON
    8        FERRITIN HEAVY CHAIN GENE LOCUS
   11 <130> FILE REFERENCE: 2159.058PC01/EKS/LMB
C--> 13 <140> CURRENT APPLICATION NUMBER: US/10/532,197
C--> 13 <141> CURRENT FILING DATE: 2005-04-21
   13 <150> PRIOR APPLICATION NUMBER: PCT/US2003/033433
   14 <151> PRIOR FILING DATE: 2003-10-22
   16 <150> PRIOR APPLICATION NUMBER: US 60/421,252
   17 <151> PRIOR FILING DATE: 2002-10-24
   19 <160> NUMBER OF SEQ ID NOS: 41
   21 <170> SOFTWARE: FastSEQ for Windows Version 4.0
   23 <210> SEQ ID NO: 1
   24 <211> LENGTH: 563
   25 <212> TYPE: DNA
   26 <213> ORGANISM: Rattus norvegicus
   28 <220> FEATURE:
   29 <221> NAME/KEY: CDS
   30 <222> LOCATION: (346)...(459)
   32 <400> SEQUENCE: 1
   33 agctcagaga cccaagagcc gcctcacaat cacacaggct cctccccgcc cacgcactgc      60
   34 tggcttgggc aacacgccta caggaagagg cggggctggg cggcccaccg cgctgattgg     120
   35 ccggagcgcg cctgacgcag gatcccgcta taaagtgcgg cccgctggtc cctacgccag     180
   36 acgttctcgc ccagagtcgc cgcggtttcc tgcttcaaca gtgcttgaac ggaacccggt     240
   37 gctcgacccc tccgaccccc gtccggccgc tttgagcctg agccctttgc aacttcgtcg     300
   38 ctccgccgct ccagcgtcgc ctccgcgcct cgtccagccg ccatc atg acc acc gcg     357
   39                                                  Met Thr Thr Ala
   40                                                   1
   42 tct ccc tcg caa gtg cgc cag aac tac cac cag gac tcg gag gct gcc      405
   43 Ser Pro Ser Gln Val Arg Gln Asn Tyr His Gln Asp Ser Glu Ala Ala
   44  5              10              15              20
   46 atc aac cgc cag atc aac ctg gag ttg tat gcc tcc tac gtc tat ctg      453
   47 Ile Asn Arg Gln Ile Asn Leu Glu Leu Tyr Ala Ser Tyr Val Tyr Leu
   48              25              30              35
   50 tcc atg gtgagtgcgg cctggccttt gcgggggcgg aaagagggtg cggcctggcc      509
   51 Ser Met
   54 tcccttgggc cacttggtga gctggcggag ggtgggttgg ggcgtggctg cggg          563
   56 <210> SEQ ID NO: 2
   57 <211> LENGTH: 38
   58 <212> TYPE: PRT
   59 <213> ORGANISM: Rattus norvegicus
   61 <400> SEQUENCE: 2
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 62 Met Thr Thr Ala Ser Pro Ser Gln Val Arg Gln Asn Tyr His Gln Asp
 63  1           5               10              15
 64 Ser Glu Ala Ala Ile Asn Arg Gln Ile Asn Leu Glu Leu Tyr Ala Ser
 65              20              25              30
 66 Tyr Val Tyr Leu Ser Met
 67          35
 69 <210> SEQ ID NO: 3
 70 <211> LENGTH: 563
 71 <212> TYPE: DNA
 72 <213> ORGANISM: Rattus norvegicus
 74 <400> SEQUENCE: 3
 75 cccgcagcca cgccccaacc caccctccgc cagctcacca agtggcccaa gggaggccag      60
 76 gccgcaccct ctttccgccc ccgcaaaggc caggccgcac tcaccatgga cagatagacg     120
 77 taggaggcat acaactccag gttgatctgg cggttgatgg cagcctccga gtcctggtgg     180
 78 tagttctggc gcacttgcga gggagacgcg gtggtcatga tggcggctgg acgaggcgcg     240
 79 gaggcgacgc tggagcggcg gagcgacgaa gttgcaaagg gctcaggctc aaagcggccg     300
 80 gacgggggtc ggaggggtcg agcaccgggt tccgttcaag cactgttgaa gcaggaaacc     360
 81 gcggcgactc tgggcgagaa cgtctggcgt agggaccagc gggccgcact ttatagcggg     420
 82 atcctgcgtc aggcgcgctc cggccaatca gcgcggtggg ccgcccagcc ccgcctcttc     480
 83 ctgtaggcgt gttgcccaag ccagcagtgc gtgggcgggg aggagcctgt gtgattgtga     540
 84 ggcggctctt gggtctctga gct                                            563
 86 <210> SEQ ID NO: 4
 87 <211> LENGTH: 232
 88 <212> TYPE: DNA
 89 <213> ORGANISM: Rattus norvegicus
 91 <220> FEATURE:
 92 <221> NAME/KEY: CDS
 93 <222> LOCATION: (51)...(197)
 95 <400> SEQUENCE: 4
 96 gcatctgcct tgctgtgggg atcaataaca aatacccttt ccactttcag tct tgt        56
 97                                                          Ser Cys
 98                                                           1
100 tat ttt gac cgg gat gat gtg gcc ctg aag aac ttt gcc aaa tac ttt      104
101 Tyr Phe Asp Arg Asp Asp Val Ala Leu Lys Asn Phe Ala Lys Tyr Phe
102      5                   10                  15
104 ctc cat caa tct cat gaa gag agg gaa cat gct gag aaa ctg atg aag      152
105 Leu His Gln Ser His Glu Glu Arg Glu His Ala Glu Lys Leu Met Lys
106      20                  25                  30
108 ctg cag aac cag cga ggt gga cga atc ttc ctg cag gat atc aag          197
109 Leu Gln Asn Gln Arg Gly Gly Arg Ile Phe Leu Gln Asp Ile Lys
110  35                  40                  45
112 gtaagtagac tatgggactg cgttaaatga gcagt                               232
114 <210> SEQ ID NO: 5
115 <211> LENGTH: 49
116 <212> TYPE: PRT
117 <213> ORGANISM: Rattus norvegicus
119 <400> SEQUENCE: 5
120 Ser Cys Tyr Phe Asp Arg Asp Asp Val Ala Leu Lys Asn Phe Ala Lys
121  1           5               10              15
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RAW SEQUENCE LISTING   DATE: 02/09/2006
PATENT APPLICATION: US/10/532,197   TIME: 18:29:57

Input Set : **A:\PTO.AMC.txt**
Output Set: **N:\CRF4\02092006\J532197.raw**

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122 Tyr Phe Leu His Gln Ser His Glu Glu Arg Glu His Ala Glu Lys Leu
123             20              25              30
124 Met Lys Leu Gln Asn Gln Arg Gly Gly Arg Ile Phe Leu Gln Asp Ile
125         35              40                  45
126 Lys
129 <210> SEQ ID NO: 6
130 <211> LENGTH: 232
131 <212> TYPE: DNA
132 <213> ORGANISM: Rattus norvegicus
134 <400> SEQUENCE: 6
135 actgctcatt taacgcagtc ccatagtcta cttaccttga tatcctgcag gaagattcgt      60
136 ccacctcgct ggttctgcag cttcatcagt ttctcagcat gttccctctc ttcatgagat     120
137 tgatggagaa agtatttggc aaagttcttc agggccacat catcccggtc aaaataacaa     180
138 gactgaaagt ggaaagggta tttgttattg atccccacag caaggcagat gc             232
140 <210> SEQ ID NO: 7
141 <211> LENGTH: 764
142 <212> TYPE: DNA
143 <213> ORGANISM: Rattus norvegicus
145 <220> FEATURE:
146 <221> NAME/KEY: CDS
147 <222> LOCATION: (34)...(159)
149 <221> NAME/KEY: CDS
150 <222> LOCATION: (252)...(413)
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W--> 152 <400> 7
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153 ctgcagatga attgacatgt ttctttgatt cag aaa cct gac cgt gat gac tgg      54
154                                     Lys Pro Asp Arg Asp Asp Trp
155                                      1               5
157 gag agc ggg ctg aat gca atg agg tgt gca ctg cac ttg gaa aag agt      102
158 Glu Ser Gly Leu Asn Ala Met Arg Cys Ala Leu His Leu Glu Lys Ser
159             10              15              20
161 gtg aat cag tca cta ctg gaa ctt cac aaa ctg gct act gac aag aat      150
162 Val Asn Gln Ser Leu Leu Glu Leu His Lys Leu Ala Thr Asp Lys Asn
163     25              30              35
165 gat ccc cac gtgagtatca gaaacacggg gtgagtggag atgatttgcc              199
166 Asp Pro His
167  40
169 acagggcttg ggagagctga ccagtaaccc tgtcccatgt tctctttcct ag tta tgt    257
170                                                         Leu Cys
173 gac ttc att gag acg cat tac ctg aat gag cag gtg aaa tcc att aaa      305
174 Asp Phe Ile Glu Thr His Tyr Leu Asn Glu Gln Val Lys Ser Ile Lys
175  45              50              55                  60
177 gaa ctg ggt gac cac gtg acc aac tta cgc aag atg gga gcc cct gaa      353
178 Glu Leu Gly Asp His Val Thr Asn Leu Arg Lys Met Gly Ala Pro Glu
179             65              70                  75
181 tct ggc atg gca gaa tat ctc ttt gac aag cac acc ctg gga cac ggt      401
182 Ser Gly Met Ala Glu Tyr Leu Phe Asp Lys His Thr Leu Gly His Gly
183             80              85                  90
185 gat gag agc taa gctgacgtcc ccaaggccat gtgactttac tggctcactg          453
186 Asp Glu Ser  *
```

```
             RAW SEQUENCE LISTING            DATE: 02/09/2006
             PATENT APPLICATION:  US/10/532,197   TIME: 18:29:57

             Input Set : A:\PTO.AMC.txt
             Output Set: N:\CRF4\02092006\J532197.raw
```

```
187           95
189 aggcagtgca tgcatgtcag gctgcctta tcttttctat aagttgcacc aaaacatctg   513
190 cttaaaagtt ctttaatttg taccatttct tcaaataaag aattttggta cccagctctt   573
191 gttgtgattg aggatgagcg caccagcttc ccttgcgtcg gctatataac cacactgcaa   633
192 cgcctgaaag aatatttatt aaactcgtag ttggggaaag atagtgaaag acaggtgtgt   693
193 tcagacagga ctaagcagtc ctggttctga gttacctgcc agactgccat gggaacatat   753
194 tcttgagtgt c                                                       764

196 <210> SEQ ID NO: 8
197 <211> LENGTH: 42
198 <212> TYPE: PRT
199 <213> ORGANISM: Rattus norvegicus
201 <400> SEQUENCE: 8
202 Lys Pro Asp Arg Asp Asp Trp Glu Ser Gly Leu Asn Ala Met Arg Cys
203  1               5                  10                  15
204 Ala Leu His Leu Glu Lys Ser Val Asn Gln Ser Leu Leu Glu Leu His
205             20                  25                  30
206 Lys Leu Ala Thr Asp Lys Asn Asp Pro His
207          35                  40

209 <210> SEQ ID NO: 9
210 <211> LENGTH: 53
211 <212> TYPE: PRT
212 <213> ORGANISM: Rattus norvegicus
214 <400> SEQUENCE: 9
215 Leu Cys Asp Phe Ile Glu Thr His Tyr Leu Asn Glu Gln Val Lys Ser
216  1               5                  10                  15
217 Ile Lys Glu Leu Gly Asp His Val Thr Asn Leu Arg Lys Met Gly Ala
218             20                  25                  30
219 Pro Glu Ser Gly Met Ala Glu Tyr Leu Phe Asp Lys His Thr Leu Gly
220          35                  40                  45
221 His Gly Asp Glu Ser
222     50

224 <210> SEQ ID NO: 10
225 <211> LENGTH: 764
226 <212> TYPE: DNA
227 <213> ORGANISM: Rattus norvegicus
229 <400> SEQUENCE: 10
230 gacactcaag aatatgttcc catggcagtc tggcaggtaa ctcagaacca ggactgctta    60
231 gtcctgtctg aacacacctg tctttcacta tctttcccca actacgagtt taataaatat   120
232 tctttcaggc gttgcagtgt ggttatatag ccgacgcaag ggaagctggt gcgctcatcc   180
233 tcaatcacaa caagagctgg gtaccaaaat tctttatttg aagaaatggt acaaattaaa   240
234 gaacttttaa gcagatgttt tggtgcaact tatagaaaag ataaaggcag cctgacatgc   300
235 atgcactgcc tcagtgagcc agtaaagtca catggccttg gggacgtcag cttagctctc   360
236 atcaccgtgt cccagggtgt gcttgtcaaa gagatattct gccatgccag attcaggggc   420
237 tcccatcttg cgtaagttgg tcacgtggtc acccagttct ttaatggatt tcacctgctc   480
238 attcaggtaa tgcgtctcaa tgaagtcaca taactaggaa agagaacatg ggacagggtt   540
239 actggtcagc tctcccaagc cctgtggcaa atcatctcca ctcaccccgt gtttctgata   600
240 ctcacgtggg gatcattctt gtcagtagcc agttgtgaa gttccagtag tgactgattc   660
241 acactcttttt ccaagtgcag tgcacacctc attgcattca gcccgctctc ccagtcatca   720
242 cggtcaggtt tctgaatcaa agaaacatgt caattcatct gcag                    764
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    244 <210> SEQ ID NO: 11
    245 <211> LENGTH: 2045
    246 <212> TYPE: DNA
    247 <213> ORGANISM: Artificial Sequence
    249 <220> FEATURE:
    250 <223> OTHER INFORMATION: Vector sequence
W--> 252 <221> NAME/KEY: CDS
    253 <222> LOCATION: (1132)...(1279)
W--> 255 <221> CDS
    256 <222> LOCATION: (1495)...(1622)
W--> 258 <221> CDS
    259 <222> LOCATION: (1715)...(1873)
W--> 261 <221> misc_feature
    262 <222> LOCATION: (1)...(2045)
    263 <223> OTHER INFORMATION: n = A,T,C or G
W--> 265 <400> 11
    266 atctgtccat ggtgagtgcg gcctggcctt tggcggggcg gaaagagggt gcggcctggc      60
    267 ctcccttggg ccacttggtg agctggcgga gggtgggttg gggcgtggcc tgctgcgggc     120
    268 ttccccgcct tccagcgccc ttctggaaaa tggagtttgt ccggggttct ttccaaaggc     180
    269 aggcagccct gccgtggcaa gtctgagcac ctagcgcttt gtggctcctg catagaccag     240
    270 gcacgtcata acacccgtgt tttgaagcct tagggctgta caactgtcag cctctccaat     300
    271 caaccctgca gttaggtgca ttttcctgca ctctcgtccc ctccggtcac atggcctgca     360
    272 ggcttctctg tttgggtgta catccagctc cagttcctct gactatggcg ggtctgcttg     420
    273 gtcatggtgt ggaatggcag ccctggggct tggtacaaag aggcttatct cttgtgaact     480
    274 tactctaacc acttctgaag cagcggcctc tacatctctg cttatcacag agcctcactt     540
    275 gcattgaaac ttatcgctag gaatctcccc ttctgtaatc accctgacct tgccaaggca     600
    276 tctagagtac tgtacgtttt taattttttat tttgcaccag ttgttgctta ctaacagaag     660
    277 tagtaggtaa catacttgtt ggaaaaagcc cacggttggg aaaaaaccat tatcgtggaa     720
    278 tacaaataca ctgagtgcct aaaactgaaa atcaaagctt ctcccaatgt atttgtgcta     780
    279 aaatacaatg ccctcagttc ttaaccaggt aatcagcagt tggctgtcta gctgaaaacc     840
    280 ttgagacctt gtgttaacca tttttttttat ttaacatgat tgttgaagga gagaattgac     900
    281 ctcccaatgt agggcacttt agcacccccc ctctcagaca aatagatatg gccttggctt     960
    282 aaagtttttt ctctgcacta atgtggagcc atagaaccct tgataaagcc aagtcccaag    1020
    283 tttgtttttcc catccttact ttaaaggcca agtagggtga caaacagcct ttaccaccat    1080
    284 tgcatctgcc ttgctgtggg gatcaataac aaataccctt tccactttca g tct tgt    1137
    285                                                          Ser Cys
    286                                                           1
    288 tat ttt gac cgg gat gat gtg gcc ctg aag aac ttt gcc aaa tac ttt    1185
    289 Tyr Phe Asp Arg Asp Asp Val Ala Leu Lys Asn Phe Ala Lys Tyr Phe
    290          5                   10                  15
    292 ctc cat caa tct cat gaa gag agg gaa cat gct gag aaa ctg atg aag    1233
    293 Leu His Gln Ser His Glu Glu Arg Glu His Ala Glu Lys Leu Met Lys
    294         20                  25                  30
    296 ctg cag aac cag cga ggt gga cga atc ttc ctg cag gat atc aag g      1279
    297 Leu Gln Asn Gln Arg Gly Gly Arg Ile Phe Leu Gln Asp Ile Lys
    298 35                  40                  45
W--> 300 taagtagact atgggactgc gttaaatgag cagtnnnnnn nnnnnnnnnn nnnnnnnnnn    1339
W--> 301 nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn    1399
W--> 302 nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn    1459
```

```
         RAW SEQUENCE LISTING ERROR SUMMARY        DATE: 02/09/2006
         PATENT APPLICATION:  US/10/532,197        TIME: 18:29:58

         Input Set : A:\PTO.AMC.txt
         Output Set: N:\CRF4\02092006\J532197.raw
```

Please Note:
Use of n and/or Xaa have been detected in the Sequence Listing. Please review the
Sequence Listing to ensure that a corresponding explanation is presented in the <220>
to <223> fields of each sequence which presents at least one n or Xaa.

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Seq#:11; N Pos. 1314,1315,1316,1317,1318,1319,1320,1321,1322,1323,1324,1325
Seq#:11; N Pos. 1326,1327,1328,1329,1330,1331,1332,1333,1334,1335,1336,1337
Seq#:11; N Pos. 1338,1339,1340,1341,1342,1343,1344,1345,1346,1347,1348,1349
Seq#:11; N Pos. 1350,1351,1352,1353,1354,1355,1356,1357,1358,1359,1360,1361
Seq#:11; N Pos. 1362,1363,1364,1365,1366,1367,1368,1369,1370,1371,1372,1373
Seq#:11; N Pos. 1374,1375,1376,1377,1378,1379,1380,1381,1382,1383,1384,1385
Seq#:11; N Pos. 1386,1387,1388,1389,1390,1391,1392,1393,1394,1395,1396,1397
Seq#:11; N Pos. 1398,1399,1400,1401,1402,1403,1404,1405,1406,1407,1408,1409
Seq#:11; N Pos. 1410,1411,1412,1413,1414,1415,1416,1417,1418,1419,1420,1421
Seq#:11; N Pos. 1422,1423,1424,1425,1426,1427,1428,1429,1430,1431,1432,1433
Seq#:11; N Pos. 1434,1435,1436,1437,1438,1439,1440,1441,1442,1443,1444,1445
Seq#:11; N Pos. 1446,1447,1448,1449,1450,1451,1452,1453,1454,1455,1456,1457
Seq#:11; N Pos. 1458,1459,1460,1461,1462,1463
Seq#:34; N Pos. 4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24
Seq#:36; N Pos. 1,2,3,4,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29
Seq#:36; N Pos. 30,31,32,33
Seq#:38; N Pos. 10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27
```

VERIFICATION SUMMARY   DATE: 02/09/2006
PATENT APPLICATION: **US/10/532,197**   TIME: 18:29:58

Input Set : **A:\PTO.AMC.txt**
Output Set: **N:\CRF4\02092006\J532197.raw**

```
L:13  M:270 C: Current Application Number differs, Replaced Current Application No
L:13  M:271 C: Current Filing Date differs, Replaced Current Filing Date
L:152 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:7
L:252 M:281 W: Numeric Fields not Ordered, <221> Sort in ascending order!
L:255 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:11
L:258 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:11
L:261 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:11
L:265 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:11
L:300 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:11 after pos.:1279
L:301 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:11 after pos.:1339
L:302 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:11 after pos.:1399
L:303 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:11 after pos.:1459
L:304 M:361 W: Invalid Split Codon, Sequence data for SEQ ID#: 11
L:695 M:281 W: Numeric Fields not Ordered, <221> Sort in ascending order!
L:699 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:34
L:700 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:34 after pos.:0
L:721 M:281 W: Numeric Fields not Ordered, <221> Sort in ascending order!
L:725 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:36
L:726 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:36 after pos.:0
L:747 M:281 W: Numeric Fields not Ordered, <221> Sort in ascending order!
L:751 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:38
L:752 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:38 after pos.:0
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Raw Sequence Listing before editing (for reference only)

PCT

RAW SEQUENCE LISTING   DATE: 02/09/2006
PATENT APPLICATION: US/10/532,197   TIME: 18:20:36

        Input Set : A:\PTO.AMC.txt
        Output Set: N:\CRF4\02092006\J532197.raw

     4 <110> APPLICANT: Biogen Idec MA Inc.
     5   Prentice, Holly
     7 <120> TITLE OF INVENTION: HIGH EXPRESSION LOCUS VECTOR BASED ON
     8   FERRITIN HEAVY CHAIN GENE LOCUS
    11 <130> FILE REFERENCE: 2159.058PC01/EKS/LMB
C--> 13 <140> CURRENT APPLICATION NUMBER: US/10/532,197
C--> 13 <141> CURRENT FILING DATE: 2005-04-21
    13 <150> PRIOR APPLICATION NUMBER: PCT/US2003/033433
    14 <151> PRIOR FILING DATE: 2003-10-22
    16 <150> PRIOR APPLICATION NUMBER: US 60/421,252
    17 <151> PRIOR FILING DATE: 2002-10-24
    19 <160> NUMBER OF SEQ ID NOS: 41
    21 <170> SOFTWARE: FastSEQ for Windows Version 4.0
    23 <210> SEQ ID NO: 1
    24 <211> LENGTH: 563
    25 <212> TYPE: DNA
    26 <213> ORGANISM: Rattus norvegicus
    28 <220> FEATURE:
    29 <221> NAME/KEY: CDS
    30 <222> LOCATION: (346)...(459)
    32 <400> SEQUENCE: 1
    33 agctcagaga cccaagagcc gcctcacaat cacacaggct cctccccgcc cacgcactgc   60
    34 tggcttgggc aacacgccta caggaagagg cggggctggg cggcccaccg cgctgattgg   120
    35 ccggagcgcg cctgacgcag gatcccgcta taaagtgcgg cccgctggtc cctacgccag   180
    36 acgttctcgc ccagagtcgc cgcggtttcc tgcttcaaca gtgcttgaac ggaacccggt   240
    37 gctcgacccc tccgaccccc gtccggccgc tttgagcctg agccctttgc aacttcgtcg   300
    38 ctccgccgct ccagcgtcgc ctccgcgcct cgtccagccg ccatc atg acc acc gcg   357
    39   Met Thr Thr Ala
    40   1
    42 tct ccc tcg caa gtg cgc cag aac tac cac cag gac tcg gag gct gcc   405
    43 Ser Pro Ser Gln Val Arg Gln Asn Tyr His Gln Asp Ser Glu Ala Ala
    44   5   10   15   20
    46 atc aac cgc cag atc aac ctg gag ttg tat gcc tcc tac gtc tat ctg   453
    47 Ile Asn Arg Gln Ile Asn Leu Glu Leu Tyr Ala Ser Tyr Val Tyr Leu
    48   25   30   35
    50 tcc atg gtgagtgcgg cctggccttt gcgggggcgg aaagagggtg cggcctggcc   509
    51 Ser Met
    54 tcccttgggc cacttggtga gctggcggag ggtgggttgg ggcgtggctg cggg   563
    56 <210> SEQ ID NO: 2
    57 <211> LENGTH: 38
    58 <212> TYPE: PRT
    59 <213> ORGANISM: Rattus norvegicus
    61 <400> SEQUENCE: 2

Does Not Comply
Corrected Diskette Needed

RAW SEQUENCE LISTING   DATE: 02/09/2006
PATENT APPLICATION: US/10/532,197   TIME: 18:20:36

Input Set : **A:\PTO.AMC.txt**
Output Set: **N:\CRF4\02092006\J532197.raw**

```
62 Met Thr Thr Ala Ser Pro Ser Gln Val Arg Gln Asn Tyr His Gln Asp
63 1               5                   10                  15
64 Ser Glu Ala Ala Ile Asn Arg Gln Ile Asn Leu Glu Leu Tyr Ala Ser
65                 20              25                  30
66 Tyr Val Tyr Leu Ser Met
67             35
69 <210> SEQ ID NO: 3
70 <211> LENGTH: 563
71 <212> TYPE: DNA
72 <213> ORGANISM: Rattus norvegicus
74 <400> SEQUENCE: 3
75 cccgcagcca cgccccaacc caccctccgc cagctcacca agtggcccaa gggaggccag        60
76 gccgcaccct ctttccgccc ccgcaaaggc caggccgcac tcaccatgga cagatagacg       120
77 taggaggcat acaactccag gttgatctgg cggttgatgg cagcctccga gtcctggtgg       180
78 tagttctggc gcacttgcga gggagacgcg gtggtcatga tggcggctgg acgaggcgcg       240
79 gaggcgacgc tggagcggcg gagcgacgaa gttgcaaagg gctcaggctc aaagcggccg       300
80 gacgggggtc ggaggggtcg agcaccgggt tccgttcaag cactgttgaa gcaggaaacc       360
81 gcggcgactc tgggcgagaa cgtctggcgt agggaccagc gggccgcact ttatagcggg       420
82 atcctgcgtc aggcgcgctc cggccaatca gcgcggtggg ccgcccagcc ccgcctcttc       480
83 ctgtaggcgt gttgcccaag ccagcagtgc gtgggcgggg aggagcctgt gtgattgtga       540
84 ggcggctctt gggtctctga gct                                               563
86 <210> SEQ ID NO: 4
87 <211> LENGTH: 232
88 <212> TYPE: DNA
89 <213> ORGANISM: Rattus norvegicus
91 <220> FEATURE:
92 <221> NAME/KEY: CDS
93 <222> LOCATION: (51)...(197)
95 <400> SEQUENCE: 4
96 gcatctgcct tgctgtgggg atcaataaca aatacccttt ccactttcag tct tgt          56
97                                                            Ser Cys
98                                                            1
100 tat ttt gac cgg gat gat gtg gcc ctg aag aac ttt gcc aaa tac ttt       104
101 Tyr Phe Asp Arg Asp Asp Val Ala Leu Lys Asn Phe Ala Lys Tyr Phe
102         5                   10                  15
104 ctc cat caa tct cat gaa gag agg gaa cat gct gag aaa ctg atg aag       152
105 Leu His Gln Ser His Glu Glu Arg Glu His Ala Glu Lys Leu Met Lys
106         20                  25                  30
108 ctg cag aac cag cga ggt gga cga atc ttc ctg cag gat atc aag           197
109 Leu Gln Asn Gln Arg Gly Gly Arg Ile Phe Leu Gln Asp Ile Lys
110 35                  40                  45
112 gtaagtagac tatgggactg cgttaaatga gcagt                                 232
114 <210> SEQ ID NO: 5
115 <211> LENGTH: 49
116 <212> TYPE: PRT
117 <213> ORGANISM: Rattus norvegicus
119 <400> SEQUENCE: 5
120 Ser Cys Tyr Phe Asp Arg Asp Asp Val Ala Leu Lys Asn Phe Ala Lys
121 1               5                   10                  15
```

RAW SEQUENCE LISTING   DATE: 02/09/2006
PATENT APPLICATION: US/10/532,197   TIME: 18:20:36

Input Set : **A:\PTO.AMC.txt**
Output Set: **N:\CRF4\02092006\J532197.raw**

```
122 Tyr Phe Leu His Gln Ser His Glu Glu Arg Glu His Ala Glu Lys Leu
123             20              25              30
124 Met Lys Leu Gln Asn Gln Arg Gly Gly Arg Ile Phe Leu Gln Asp Ile
125         35                  40                  45
126 Lys
129 <210> SEQ ID NO: 6
130 <211> LENGTH: 232
131 <212> TYPE: DNA
132 <213> ORGANISM: Rattus norvegicus
134 <400> SEQUENCE: 6
135 actgctcatt taacgcagtc ccatagtcta cttaccttga tatcctgcag gaagattcgt      60
136 ccacctcgct ggttctgcag cttcatcagt ttctcagcat gttccctctc ttcatgagat     120
137 tgatggagaa agtatttggc aaagttcttc agggccacat catcccggtc aaaataacaa     180
138 gactgaaagt ggaaagggta tttgttattg atccccacag caaggcagat gc            232
140 <210> SEQ ID NO: 7
141 <211> LENGTH: 764
142 <212> TYPE: DNA
143 <213> ORGANISM: Rattus norvegicus
145 <220> FEATURE:
146 <221> NAME/KEY: CDS
147 <222> LOCATION: (34)...(159)
149 <221> NAME/KEY: CDS
150 <222> LOCATION: (252)...(413)
```
W--> 152 <400> 7
```
153 ctgcagatga attgacatgt ttctttgatt cag aaa cct gac cgt gat gac tgg      54
154                                     Lys Pro Asp Arg Asp Asp Trp
155                                      1           5
157 gag agc ggg ctg aat gca atg agg tgt gca ctg cac ttg gaa aag agt     102
158 Glu Ser Gly Leu Asn Ala Met Arg Cys Ala Leu His Leu Glu Lys Ser
159         10              15              20
161 gtg aat cag tca cta ctg gaa ctt cac aaa ctg gct act gac aag aat     150
162 Val Asn Gln Ser Leu Leu Glu Leu His Lys Leu Ala Thr Asp Lys Asn
163     25              30              35
165 gat ccc cac gtgagtatca gaaacacggg gtgagtggag atgatttgcc           199
166 Asp Pro His
167  40
169 acagggcttg ggagagctga ccagtaaccc tgtcccatgt tctctttcct ag tta tgt     257
170                                                            Leu Cys
173 gac ttc att gag acg cat tac ctg aat gag cag gtg aaa tcc att aaa     305
174 Asp Phe Ile Glu Thr His Tyr Leu Asn Glu Gln Val Lys Ser Ile Lys
175  45              50              55              60
177 gaa ctg ggt gac cac gtg acc aac tta cgc aag atg gga gcc cct gaa     353
178 Glu Leu Gly Asp His Val Thr Asn Leu Arg Lys Met Gly Ala Pro Glu
179                 65              70                  75
181 tct ggc atg gca gaa tat ctc ttt gac aag cac acc ctg gga cac ggt     401
182 Ser Gly Met Ala Glu Tyr Leu Phe Asp Lys His Thr Leu Gly His Gly
183         80              85                  90
185 gat gag agc taa gctgacgtcc ccaaggccat gtgactttac tggctcactg         453
186 Asp Glu Ser  *
```

```
187            95
189 aggcagtgca tgcatgtcag gctgccttta tcttttctat aagttgcacc aaaacatctg   513
190 cttaaaagtt ctttaatttg taccatttct tcaaataaag aattttggta cccagctctt   573
191 gttgtgattg aggatgagcg caccagcttc ccttgcgtcg gctatataac cacactgcaa   633
192 cgcctgaaag aatatttatt aaactcgtag ttggggaaag atagtgaaag acaggtgtgt   693
193 tcagacagga ctaagcagtc ctggttctga gttacctgcc agactgccat gggaacatat   753
194 tcttgagtgt c                                                        764
196 <210> SEQ ID NO: 8
197 <211> LENGTH: 42
198 <212> TYPE: PRT
199 <213> ORGANISM: Rattus norvegicus
201 <400> SEQUENCE: 8
202 Lys Pro Asp Arg Asp Asp Trp Glu Ser Gly Leu Asn Ala Met Arg Cys
203  1               5                  10                  15
204 Ala Leu His Leu Glu Lys Ser Val Asn Gln Ser Leu Leu Glu Leu His
205             20                  25                  30
206 Lys Leu Ala Thr Asp Lys Asn Asp Pro His
207          35                  40
209 <210> SEQ ID NO: 9
210 <211> LENGTH: 53
211 <212> TYPE: PRT
212 <213> ORGANISM: Rattus norvegicus
214 <400> SEQUENCE: 9
215 Leu Cys Asp Phe Ile Glu Thr His Tyr Leu Asn Glu Gln Val Lys Ser
216  1               5                  10                  15
217 Ile Lys Glu Leu Gly Asp His Val Thr Asn Leu Arg Lys Met Gly Ala
218             20                  25                  30
219 Pro Glu Ser Gly Met Ala Glu Tyr Leu Phe Asp Lys His Thr Leu Gly
220          35                  40                  45
221 His Gly Asp Glu Ser
222      50
224 <210> SEQ ID NO: 10
225 <211> LENGTH: 764
226 <212> TYPE: DNA
227 <213> ORGANISM: Rattus norvegicus
229 <400> SEQUENCE: 10
230 gacactcaag aatatgttcc catggcagtc tggcaggtaa ctcagaacca ggactgctta    60
231 gtcctgtctg aacacacctg tctttcacta tctttcccca actacgagtt taataaatat   120
232 tctttcaggc gttgcagtgt ggttatatag ccgacgcaag ggaagctggt gcgctcatcc   180
233 tcaatcacaa caagagctgg gtaccaaaat tctttatttg aagaaatggt acaaattaaa   240
234 gaacttttaa gcagatgttt tggtgcaact tatagaaaag ataaaggcag cctgacatgc   300
235 atgcactgcc tcagtgagcc agtaaagtca catggccttg gggacgtcag cttagctctc   360
236 atcaccgtgt cccagggtgt gcttgtcaaa gagatattct gccatgccag attcaggggc   420
237 tcccatcttg cgtaagttgg tcacgtggtc acccagttct ttaatggatt tcacctgctc   480
238 attcaggtaa tgcgtctcaa tgaagtcaca taactaggaa agagaacatg ggacagggtt   540
239 actggtcagc tctcccaagc cctgtggcaa atcatctcca ctcaccccgt gtttctgata   600
240 ctcacgtggg gatcattctt gtcagtagcc agttgtgaa gttccagtag tgactgattc     660
241 acactctttt ccaagtgcag tgcacacctc attgcattca gcccgctctc ccagtcatca   720
242 cggtcaggtt tctgaatcaa agaaacatgt caattcatct gcag                    764
```

RAW SEQUENCE LISTING   DATE: 02/09/2006
PATENT APPLICATION: US/10/532,197   TIME: 18:20:36

Input Set : **A:\PTO.AMC.txt**
Output Set: **N:\CRF4\02092006\J532197.raw**

```
      244 <210> SEQ ID NO: 11
      245 <211> LENGTH: 2045
      246 <212> TYPE: DNA
      247 <213> ORGANISM: Artificial Sequence
      249 <220> FEATURE:
      250 <223> OTHER INFORMATION: Vector sequence
W--> 252 <221> NAME/KEY: CDS
      253 <222> LOCATION: (1132)...(1279)
W--> 255 <221> CDS
      256 <222> LOCATION: (1495)...(1622)
W--> 258 <221> CDS
      259 <222> LOCATION: (1715)...(1873)
W--> 261 <221> misc_feature
      262 <222> LOCATION: (1)...(2045)
      263 <223> OTHER INFORMATION: n = A,T,C or G
W--> 265 <400> 11
      266 atctgtccat ggtgagtgcg gcctggcctt tggcggggcg gaaagagggt gcggcctggc    60
      267 ctcccttggg ccacttggtg agctggcgga gggtgggttg gggcgtggcc tgctgcgggc   120
      268 ttccccgcct tccagcgccc ttctggaaaa tggagtttgt ccggggttct ttccaaaggc   180
      269 aggcagccct gccgtggcaa gtctgagcac ctagcgcttt gtggctcctg catagaccag   240
      270 gcacgtcata acacccgtgt tttgaagcct tagggctgta caactgtcag cctctccaat   300
      271 caaccctgca gttaggtgca ttttcctgca ctctcgtccc ctccggtcac atggcctgca   360
      272 ggcttctctg tttgggtgta catccagctc cagttcctct gactatggcg ggtctgcttg   420
      273 gtcatggtgt ggaatggcag ccctggggct tggtacaaag aggcttatct cttgtgaact   480
      274 tactctaacc acttctgaag cagcggcctc tacatctctg cttatcacag agcctcactt   540
      275 gcattgaaac ttatcgctag gaatctcccc ttctgtaatc accctgacct tgccaaggca   600
      276 tctagagtac tgtacgtttt taattttat tttgcaccag ttgttgctta ctaacagaag   660
      277 tagtaggtaa catacttgtt ggaaaaagcc cacggttggg aaaaaaccat tatcgtggaa   720
      278 tacaaataca ctgagtgcct aaaactgaaa atcaaagctt ctcccaatgt atttgtgcta   780
      279 aaatacaatg ccctcagttc ttaaccaggt aatcagcagt tggctgtcta gctgaaaacc   840
      280 ttgagacctt gtgttaacca tttttttat ttaacatgat tgttgaagga gagaattgac   900
      281 ctcccaatgt agggcacttt agcacccccc ctctcagaca aatagatatg gccttggctt   960
      282 aaagttttt ctctgcacta atgtggagcc atagaaccct tgataaagcc aagtcccaag  1020
      283 tttgttttcc catccttact ttaaaggcca agtagggtga caaacagcct ttaccaccat  1080
      284 tgcatctgcc ttgctgtggg gatcaataac aaataccctt tccactttca g tct tgt  1137
      285                                                      Ser Cys
      286                                                       1
      288 tat ttt gac cgg gat gat gtg gcc ctg aag aac ttt gcc aaa tac ttt  1185
      289 Tyr Phe Asp Arg Asp Asp Val Ala Leu Lys Asn Phe Ala Lys Tyr Phe
      290         5                   10                  15
      292 ctc cat caa tct cat gaa gag agg gaa cat gct gag aaa ctg atg aag  1233
      293 Leu His Gln Ser His Glu Glu Arg Glu His Ala Glu Lys Leu Met Lys
      294       20                  25                  30
      296 ctg cag aac cag cga ggt gga cga atc ttc ctg cag gat atc aag g    1279
      297 Leu Gln Asn Gln Arg Gly Gly Arg Ile Phe Leu Gln Asp Ile Lys
      298 35                  40                  45
W--> 300 taagtagact atgggactgc gttaaatgag cagtnnnnnn nnnnnnnnnn nnnnnnnnnn  1339
W--> 301 nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn  1399
W--> 302 nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn  1459
```

from Sequence 11

```
                                              Lys Pro Asp Arg Asp Asp
                                              50                  55

tgg gag agc ggg ctg aat gca atg agg tgt gca ctg cac ttg gaa aag      1562
Trp Glu Ser Gly Leu Asn Ala Met Arg Cys Ala Leu His Leu Glu Lys
                60-60           65-65                 70-70
```

misaligned numbering began here and continued throughout the sequence

Input Set : **A:\PTO.AMC.txt**
Output Set: **N:\CRF4\02092006\J532197.raw**

<u>Please Note:</u>
Use of n and/or Xaa have been detected in the Sequence Listing. Please review the
Sequence Listing to ensure that a corresponding explanation is presented in the <220>
to <223> fields of each sequence which presents at least one n or Xaa.

```
Seq#:11; N Pos. 1314,1315,1316,1317,1318,1319,1320,1321,1322,1323,1324,1325
Seq#:11; N Pos. 1326,1327,1328,1329,1330,1331,1332,1333,1334,1335,1336,1337
Seq#:11; N Pos. 1338,1339,1340,1341,1342,1343,1344,1345,1346,1347,1348,1349
Seq#:11; N Pos. 1350,1351,1352,1353,1354,1355,1356,1357,1358,1359,1360,1361
Seq#:11; N Pos. 1362,1363,1364,1365,1366,1367,1368,1369,1370,1371,1372,1373
Seq#:11; N Pos. 1374,1375,1376,1377,1378,1379,1380,1381,1382,1383,1384,1385
Seq#:11; N Pos. 1386,1387,1388,1389,1390,1391,1392,1393,1394,1395,1396,1397
Seq#:11; N Pos. 1398,1399,1400,1401,1402,1403,1404,1405,1406,1407,1408,1409
Seq#:11; N Pos. 1410,1411,1412,1413,1414,1415,1416,1417,1418,1419,1420,1421
Seq#:11; N Pos. 1422,1423,1424,1425,1426,1427,1428,1429,1430,1431,1432,1433
Seq#:11; N Pos. 1434,1435,1436,1437,1438,1439,1440,1441,1442,1443,1444,1445
Seq#:11; N Pos. 1446,1447,1448,1449,1450,1451,1452,1453,1454,1455,1456,1457
Seq#:11; N Pos. 1458,1459,1460,1461,1462,1463
Seq#:34; N Pos. 4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24
Seq#:36; N Pos. 1,2,3,4,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29
Seq#:36; N Pos. 30,31,32,33
Seq#:38; N Pos. 10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27
```

Input Set : **A:\PTO.AMC.txt**
Output Set: **N:\CRF4\02092006\J532197.raw**

```
L:13  M:270 C: Current Application Number differs, Replaced Current Application No
L:13  M:271 C: Current Filing Date differs, Replaced Current Filing Date
L:152 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:7
L:252 M:281 W: Numeric Fields not Ordered, <221> Sort in ascending order!
L:255 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:11
L:258 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:11
L:261 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:11
L:265 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:11
L:300 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:11 after pos.:1279
L:301 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:11 after pos.:1339
L:302 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:11 after pos.:1399
L:303 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:11 after pos.:1459
L:304 M:361 W: Invalid Split Codon, Sequence data for SEQ ID#: 11
L:309 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:11
L:313 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:11
L:317 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:11
L:325 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:11
L:329 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:11
L:333 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:11
L:337 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:11
L:695 M:281 W: Numeric Fields not Ordered, <221> Sort in ascending order!
L:699 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:34
L:700 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:34 after pos.:0
L:721 M:281 W: Numeric Fields not Ordered, <221> Sort in ascending order!
L:725 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:36
L:726 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:36 after pos.:0
L:747 M:281 W: Numeric Fields not Ordered, <221> Sort in ascending order!
L:751 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:38
L:752 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:38 after pos.:0
```